

CONTRIBUTIONS FROM THE GRAY HERBARIUM OF  
HARVARD UNIVERSITY—NO. LXXXIII.

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## III. FOUR GRASSES OF EASTERN AMERICA

M. L. FERNALD

*POA labradorica*, n. sp., perennis rhizomate repente; foliis imis marcescentibus subcoriaceis rosulatis, vaginis subinflatis chartaceis valde carinatis circa 14-costatis 1.5–4 cm. longis, ligulis brevissimis truncatis, laminis 0.5–1.5 dm. longis 3–6 mm. latis subrigidis valde plicatis vel convolutis apice subulatis; foliis caulinis 2–4 remotis, lamina suprema falcata subrigida subacerosa 4–7 cm. longa, ligulis chartaceis 2.5 mm. longis; culmo solitario stricto tereti 1.5–4 dm. alto glabro crasso ad basin 2.5–4 mm. diametro; panícula stricta 6–12 cm. longa 0.7–2 cm. diametro ramis coarctatis glabris; spiculis ellipticis purpurascens vel stramineis valde compressis 5.5–9 mm. longis 2–3-floris; glumis coriaceis valde carinatis glabris ovato-lanceolatis acuminatis margine apiceque albido-hyalinis, gluma inferiore 4.5–5.5 mm. longa, superiore 5–7.5 mm. longa; rhachilla deinde elongata flexuosa glabra; lemmatibus lanceolatis 4–5 mm. longis 5–7-nerviis supra glabris basin versus pilosis apice late hyalinis deinde erosis vel fimbriatis; palea lineari-lanceolata bicarinata, carinis scabris, apice bifida; antheris linearibus 2 mm. longis.—East coast of LABRADOR: Nain, August 11, 1897, *J. D. Sornborger*, no. 239, distributed as *P. eminens* (TYPE in Gray Herb.); Bowdoin Harbor, July 25–August 4, 1927, *C. S. Sewall*, no. 111; Jack Lane's Bay, July, 1927, *Sewall*, no. 201; Anatolak, June–August, 1928, *Sewall*, nos. 426, 428.

The type of *Poa labradorica*, long separated off in the herbarium as a distinct species, is now reinforced by the four collections made by Mr. Sewall in the same general region, the area centering on Nain. These form a thoroughly consistent series, clearly distinct from *P. eminens* Presl in many characters. The latter is a very glaucous plant, with much broader and flat whitish leaves (up to 1.5 cm. broad) and stouter (up to 9 mm. thick) culms, the uppermost cauline leaf with blade 1–3 dm. long; *P. labradorica* being scarcely if at all glaucous, with strongly convolute green leaves 3–6 mm. wide, with culms at most 4 mm. thick and with the blade of the uppermost leaf only 4–7 cm. long. In *P. eminens* the dense or lax panicles are 0.8–3.3 dm. long, 2–10 cm. in diameter, in *P. labradorica* 6–12 cm. long and only 0.7–2 cm. thick. In *P. eminens* the spikelets are large, 3–5-flowered, with the ovate glumes up to 11 mm. long and scabrous on the keel, the ovate lemmas scabrous to or essentially to the tip;



in *P. labradorica*, with 2-3-flowered spikelets, the more lanceolate glumes glabrous throughout and at most 7.5 mm. long, the much narrower lemmas glabrous except at the pilose base.

Although Scribner & Merrill have proposed *Poa Trinii* Scrib. & Merr., Contrib. U. S. Nat. Herb. xiii. 73 (1910) as a second species related to *P. eminens*, it is clear that *P. labradorica* cannot be referred to *P. Trinii*. In fact, I am quite unable to separate the latter from *P. eminens*. The characters used by Scribner & Merrill are not

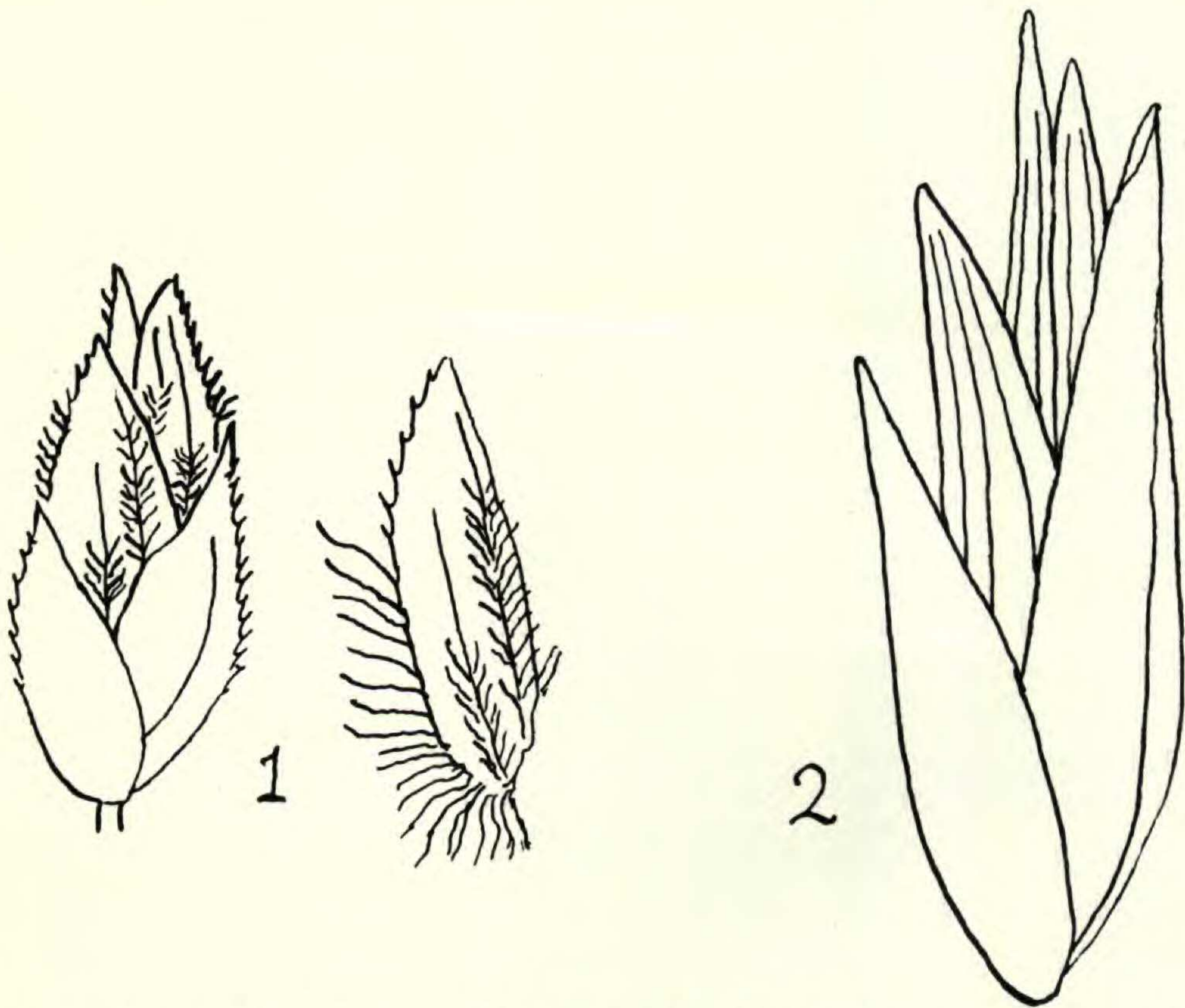


FIG. 1, spikelet and lemma of *Poa gaspensis*  $\times 10$ ; FIG. 2, spikelet of *P. labradorica*  $\times 10$ .

constant and the specimens they cite, including the type, are readily matched in the variable series from single colonies of *P. eminens*.

*Poa macrocalyx* Trautv. & Meyer, Fl. Ochot. Phaenog. 103 (1856) has foliage and spikelets somewhat suggesting those of *P. labradorica* and Hultén, Fl. Kamtch. and Adj. Isl. i. 128 (1927) speaks of his specimens as "collected on the seashore, where they grow in the *Elymus* belt or in the subalpine meadows usually found inside that belt, often together with *P. eminens*." We have no record of the exact habitat of *P. labradorica*, but from its habit and aspect it is presumably the same as that of the related *P. eminens* and *P. macro-*



*calyx*. *P. labradorica* cannot be placed in the latter species: *P. macrocalyx* has the branches of the panicle very scabrous-hirtellous and loosely spreading, the branches in *P. labradorica* being glabrous and closely appressed; in *P. macrocalyx* the keel and lateral nerves of the lemma are densely silky-pubescent, in *P. labradorica* glabrous.

**POA *gaspensis***, n. sp., plus minusve dense caespitosa, culmis numerosis teretibus glabris strictis 1.5–5 dm. altis basi vaginis foliorum emortuum scariosis brunneis vestitis; caudicibus novellis foliosis, foliis erectis anguste linearibus 1–2 (in umbra –3) dm. longis 1–4 mm. latis utrinque scabridulis vel glabris apice acutis vel subacutis calloso-cucullatis, ligulis truncatis 0.5 mm. longis; foliis caulinis 2 vel 3 latioribus brevioribusque, vaginis arctis lamina valde longioribus, laminis 1.5–8 cm. longis 2–5 mm. latis, ligulis 2–6 mm. longis; panicula subcylindrica vel anguste ovoidea 3–12 cm. longa 0.6–6 cm. diametro, ramis capillaribus remotis glabris vel scabrellis divergentibus vel adscendentibus, ad apicem floriferis; spiculis anguste ovatis valde compressis 3–5 mm. longis pedicellatis 3–4-floris; glumis hyalinis lucidis ovatis acuminatis 3-nerviis margine late albescentibus carina ciliatis, superiore 2.8–4.5 mm. longa; lemmatibus hyalinis albido-marginatis acutis vel subacutis 2.5–4.5 mm. longis 5-nerviis, nervo medio supra mediam longe piloso ad apicem scabro-ciliato, nervo marginali supra mediam longe piloso, nervo intermedio ad basin piloso; antheris 1.2–1.4 mm. longis.—Gaspé County, QUEBEC: wooded alluvial banks and gravelly and sandy beaches and bars of River St. Anne des Monts, July 14–16, 1906, *Fernald & Collins*, nos. 343, 344 (TYPE in Gray Herb.), 345, 347, 356, 358. No. 339 from sienitic rock-slides, Table-topped Mountain, August 9–11, 1906, probably belongs here but has extremely large spikelets.

*Poa gaspensis* has the habit of *P. alpina* L., *P. paucispicula* Scribn. & Merr. and *P. bracteosa* Kom. From *P. alpina* it is at once distinguished by its more slender caudices, narrower leaves, longer and narrowed glumes and more hyaline glumes and lemmas, the latter with the long pilosity of the nerves running much higher. *P. paucispicula* of Alaska has the second glume with a smooth keel; the lemmas nearly smooth, except for pilosity toward the base. *P. bracteosa* of Kamtchatka is described as having the glumes and lemmas glabrous (except for the cobweb at base of the latter) and Hultén states that the anthers are 2–2.5 mm. long (in *P. gaspensis* less than 1.5 mm.).

Some specimens of *Poa gaspensis* suggest *P. alpigena* (Hartm.) Lindm. f., which abounds on the Gaspé Peninsula and is highly variable, a loosely stoloniferous species; others suggest *P. alpina*, which is also abundant in the region. It is possible that *P. gaspensis* may have originated through crossing of these two dominant species,



but along the Ste. Anne des Monts it is now a common and characteristic plant. It is there associated with other endemics of the Ste. Anne valley, which are not closely related to other species in the region: *Salix chlorolepis* Fern., *S. obtusata* Fern., *Fragaria multicipita* Fern., *Solidago mensalis* Fern. and *S. chlorolepis* Fern., and with still other near-endemics (known in the Ste. Anne valley but also in other adjacent areas) such as *Salix hebecarpa* Fern., *Arenaria marcescens* Fern., *Ranunculus Allenii* Robins., *Saxifraga gaspensis* Fern. and *Vaccinium nubigenum* Fern. These are, for the most part, local representatives of species of western North America, Siberia or the Arctic; and *Poa gaspensis* seems to belong with them in having its nearest affinity with two species of the North Pacific region, *P. paucispicula* of Alaska and *P. bracteosa* of Kamtchatka.

GLYCERIA STRIATA (Lam.) Hitchc., var. **stricta** (Scribn.), n. comb. *Panicularia nervata stricta* Scribn. in Nelson, U. S. Dept. Agric. Div. Agrost. Bull. xiii. 44 (1898). *P. nervata rigida* Nash in Rydb. Mem. N. Y. Bot. Gard. i. 54 (1900). *G. nervata stricta* Scribn. acc. to Nash, l. c. as syn. (1900). *G. nervata rigida* (Nash) Lunell, Am. Midl. Nat. iv. 223 (1915). *P. rigida* (Nash) Rydb. Fl. Rocky Mts. 83, 1060 (1917). *P. nervata*, f. *stricta* (Scribn.) House, Bull. N. Y. State Mus. ccliv. 118 (1924), at least as to name-bringing synonym.

It has recently been pointed out by Professor A. S. Hitchcock, that the common plant of eastern America which we have been calling *Glyceria nervata* (Willd.) Trin. (1830) has an earlier specific name and he, therefore, publishes the combination *G. striata* (Lam.) Hitchc.<sup>1</sup> The new combination goes back to *Poa striata* Lam. Tabl. Encycl. i. 183 (1791), while *G. nervata* rests upon *Poa nervata* Willd. Sp. Pl. i. 389 (1797). Lamarck's plant came from Virginia and is, unquestionably, the common grass of the eastern United States. My purpose in this note is to direct attention to its more boreal representative which occurs across the continent northward, from Labrador to Alaska, southward into the northernmost states and along the Rocky Mountains to New Mexico and Arizona and even into Mexico. This is the grass distinguished very inadequately by Scribner as *Panicularia nervata stricta* and variously treated by other students: as a species, *P. rigida*, by Rydberg; as a mere form by House, and as not worthy any recognition at all by Hitchcock.<sup>2</sup>

<sup>1</sup> Hitchc. Proc. Biol. Soc. Wash. xli. 157 (1928).

<sup>2</sup> Hitchc. in Abrams, Ill. Fl. Pacif. States, i. 213 (1923), where the variety, which alone occurs in Washington and Oregon, is not mentioned and an illustration of the eastern plant, borrowed from Britton & Brown, is used to represent the very different western one.



The very different interpretations of var. *stricta* above indicated are clear evidence that the plant is not generally well understood. The only author who has given a good account of it is Rydberg, whose excellent diagnostic characters clearly indicate that he has studied the plants:

- Leaf-blades flat and lax; lemma slightly scarious-margined;  
 branches of the inflorescence long; empty glumes obtuse. . . 1. *P. nervata*.  
 Leaf-blades conduplicate, stiff, ascending; lemma distinctly  
 scarious-margined; branches of the inflorescence short,  
 strongly ascending, not drooping. . . . . 3. *P. rigida*.

And again: *P. NERVATA* with stems 3–10 dm. high, leaf-blades 1.5–3 dm. long, 4–10 mm. wide, scabrous above, panicle 7–20 cm. long; *P. RIGIDA* with stems 3–4 dm. high, leaf-blades 5–15 cm. long, 3–4 mm. wide, panicle about 1 dm. long, lemma rounded-oval, usually purplish.

Although separating *Panicularia rigida* as a plant of the Rocky Mts., Rydberg did not go far enough, for it is the wide-ranging northern representative of *Glyceria striata* (*G. nervata*); and in extending the range of the latter to Alaska he was including much which belongs with the former.

In the field and in the herbarium I have long recognized the two extremes as either very strong varieties or fairly distinct species and a re-study of the material confirms these earlier decisions. In view, however, of the too frequent breaking down of characters it seems to me better to express the facts, to treat them as extreme geographic varieties. Some points, not emphasized by Rydberg, should be further stressed and I should distinguish the two as follows:

*G. NERVATA*. Culms 0.3–1.5 m. high: leaves flat, up to 1 cm. broad, harsh above; the uppermost with blade 1–3 dm. long: panicle 1–3 dm. long, lax and open, the loosely ascending branches in age becoming divergent or sometimes even reflexed: spikelets greenish, rarely purplish: lemmas barely if at all scarious-tipped.—Eastern United States, extending north to southern Ontario, southern Quebec, Prince Edward Island, Cape Breton Island (Nova Scotia) and southern Newfoundland, commonly in boggy or peaty meadows, swales and thickets.

Var. *STRICTA*. Culms usually lower, 0.2–0.9 m. high, and more slender: leaves flat or conduplicate, up to 5 mm. broad, smooth or barely scabrous above; the uppermost with blade 0.3–2 dm. long: panicle 0.5–1.5 (rarely –2) dm. long, with the branches strongly ascending, only rarely divergent or reflexed in age: spikelets purple, rarely green, commonly larger: lemmas more rounded, with broad scarious tip.—Hamilton Inlet, Labrador to Alaska, south to Newfoundland, Nova Scotia, Maine, northern New Hampshire, western



Massachusetts, central and western New York, northern Illinois, Iowa, South Dakota, New Mexico, Arizona and Oregon, and in Mexico to Hidalgo; commonly in rich or calcareous soils.

*GLYCERIA arkansana*, n. sp., ab *G. septentrionali* differt culmis crassis 1 cm. diametro; foliis flaccidis 1–1.8 cm. latis subtus laevibus supra scabridulis, ligulis hyalinis 1 cm. longis; paniculis 4–7 dm. longis, ramis laevibus adscendentibus deinde divergentibus; spiculis linearibus 10–15-floris 1.5–2 cm. longis; glumis oblongo-ovatis laevibus subcoriaceis, superiore 2.5–3.5 mm. longa; lemmatibus membranaceis oblongo-ovatis subacutis 2.5–3 mm. longis hirtellis valde 7-costatis.—Arkansas and Louisiana. ARKANSAS: common in swamp, Varner, Lincoln County, April 29, 1898, *B. F. Bush*, no. 9, as *Panicularia fluitans* (TYPE in Gray Herb.). LOUISIANA: without definite locality, *Hall*, no. 685; infrequent in wet ground, Gretna, May 10, 1899, *C. R. Ball*, no. 362, as *Panicularia fluitans*.

*Glyceria arkansana* is a coarser plant than *G. septentrionalis*, with broader and more flaccid leaves and larger panicles. Yet, its strongest characters are in the smaller and more delicate spikelets. In *G. septentrionalis* the glumes are firmer, the upper one 4.5–5.7 mm. long (in *G. arkansana* 2.5–3.5 mm.). The coriaceous lemmas of *G. septentrionalis* are 3.6–5.5 mm. long, scabrous-puberulent and only obscurely 7-nerved; the lemmas of *G. arkansana* only 2.5–3 mm. long, thin or membranaceous, definitely hirtellous and very sharply and prominently nerved. *G. fluitans* (L.) R. Br., to which *G. arkansana* is likewise related, has the glumes and lemmas as large as in *G. septentrionalis* but the lemmas thinner and less pubescent; *G. borealis* (Nash) Batchelder has as small and as delicate spikelets as *G. arkansana* but the lemmas quite glabrous; and *G. leptostachya* Buckl. and *G. acutiflora* Torr., though of the same group, are so different as scarcely to need comparison with the plant of Arkansas and Louisiana.

(To be continued)

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## NOTES FROM THE HERBARIUM OF THE UNIVERSITY OF WISCONSIN—IV.

NORMAN C. FASSETT.

ACONITUM NOVEBORACENSE Gray, var. **quasiciliatum**, n. var., caulibus saepe recumbentibus, 6–10 dm. longis; foliis 5–20 cm. latis, orbiculatis, fere ad basem 5–7-divisis, fere glabris minutis setulis dispersis marginis revolutae exceptis; sepalis caeruleis, supremis 1.5 cm. longis, in rostrum horizontale contractis, filamentis superne